

ART AND CULTURE

❖ **Ratnagiri's pre-historic rock art: Why a proposed oil refinery has experts worried**

➤ **CONTEXT: Experts and conservationists have raised concerns over the proposed location for a mega oil refinery in Barsu village of Maharashtra's Ratnagiri district. They claim that the refinery might damage prehistoric geoglyphs found in the area.**

- The sites are protected by the state archaeology department and the Archaeological Survey of India (ASI).
- In April 2022, these sites in the Konkan region were added to a tentative list of UNESCO's world heritage sites. While the UNESCO listing dates these sites to be over 12,000 years old, some experts have claimed that these sites might go as far back as 20,000 years, and that this can be ascertained through carbon and geological dating.
- The Barsu-Solgaon site was proposed after the original plan to construct a refinery in Nanar village of the district was dropped in 2019.

➤ **What are geoglyphs?**

- Geoglyphs are a form of prehistoric rock art, created on the surface of laterite plateaus (Sada in Marathi).
- They are made by removing a part of the rock surface through an incision, picking, carving or abrading. They can be in the form of rock paintings, etchings, cup marks and ring marks.
- The UNESCO listing mentions "Konkan geoglyphs." However, elsewhere, the term petroglyph (literally, "rock symbol/character") is also used.
- As per the UNESCO listing, petroglyphs and geoglyphs share similarities as both require the skills of removing parts or engraving a symbol on the rock surface.

➤ **What is the significance of Ratnagiri's prehistoric rock art?**

- Clusters of geoglyphs are spread across the Konkan coastline in Maharashtra and Goa, spanning around 900 km. Porous laterite rock, which lends itself to such carving, is found on a large scale across the entire region.
- Ratnagiri district has more than 1,500 pieces of such art, also called "Katal shilpa," spread across 70 sites. UNESCO's tentative world heritage list mentions seven sites with petroglyphs in Ratnagiri district — Ukshi, Jambharun, Kasheli, Rundhe Tali, Devihsol, Barsu and Devache Gothane, one in Sindhudurg district — Kudopi village, and nine sites at Phansamal in Goa.
- According to UNESCO, "rock art in India is one of oldest material evidence of the country's early human creativity." Ratnagiri's rock art is evidence of the continued existence of human settlements from the Mesolithic (middle stone age) to the early historic era. The geoglyphs also show the existence of certain types of fauna that are no longer present in the region today.

- Ratnagiri's prehistoric sites are among three Indian attractions that may soon become World Heritage Sites. The other two include Jingkieng Jri, the living root bridge in Meghalaya, and Sri Veerabhadra Temple in Andhra Pradesh's Lepakshi.

➤ **What does the imagery in these sites tell us?**

- UNESCO's World Heritage Site listing says that imagery from these sites shows how people "adapted to ephemeral wetlands in a dry-arid plateau having shallow rock pools, streams and watercourses".
- Experts say that the discovery of geoglyphs has added to ongoing research on human resilience and adaptation to extreme fluctuations in climates.
- The geoglyph clusters also are examples of advanced artistic skills, showing the evolution of techniques of etching and scooping in rock art.

- The figures depicted in the geoglyphs include humans and animals such as deer, elephant, tiger, monkey, wild boar, rhinoceros, hippopotamus, cattle, pig, rabbit, and monkey.

- They also include a high number of reptilian and amphibian creatures such as tortoises and alligators, aquatic animals such as sharks and sting rays, and birds like peacocks.

- Some clusters have one or two standalone figures of larger-than-life scale, while others show multiple figures gathered together, seemingly for a purpose.

- The largest rock engraving or geoglyph in India is at Kasheli in the Ratnagiri district, which has a large figure of an elephant with dimensions of 18X13 metres.

- According to the UNESCO listing "The iconography, content, scale and composition record faunal, especially marine and large mammals that have become extinct in the Indian subcontinent over 30,000 years,".

➤ **How were Geoglyphs in the Konkan region found?**

- Nisarga Yatri Sanstha, a Ratnagiri-based non-profit organisation, has been working for the last few years to find and preserve geoglyphs in the Konkan region. Led by a local conservationist, Sudhir Risbud, Nisarga Yatri has thus far discovered over 1,700 geoglyphs in more than 72 villages. It is this team that brought these priceless prehistoric sites to the knowledge of Indian authorities.

- While they came across rock carvings in mid- 2000s while working on other projects, it was in 2010 that Risbud and his team started making a concerted effort to determine how many such sites are around, often asking villagers for help. A shepherd in Rajapur taluka first spotted a location for the team and pointed to the boundary wall and the shape of bushes around the geoglyph. This led to the discovery of over a thousand rock carvings across the Konkan region, which later became protected monuments.

➤ **Why have experts raised red flags over the refinery project site at Barsu- Solgaon?**

- The committee of experts appointed by the Union Ministry of Science and Technology visited Ratnagiri recently to assess the funds required for the conservation of geoglyphs.
- According to senior archaeologist more than 250 geoglyphs have been identified in the area where the petrochemical refinery will be built.
- According to experts if the project starts at the presently proposed site in Barsu, the rock carvings will get destroyed due to construction and chemical reaction at the site.
- Experts argue "A refinery project can be set up elsewhere in Konkan beyond 5-6 km of the petroglyphs."

PRELIMS

1. Nasha Mukht Bharat Abhivan (NMBA)

➤ **CONTEXT: Ministry of Social Justice & Empowerment recently released its Key Initiatives and Achievements under various schemes and programmes and also gave data about NMBA.**

➤ **About**

- NMBA was launched on 15th August 2020 by Ministry of Social Justice & Empowerment and is being implemented in 372 most vulnerable districts based on the findings of the first Comprehensive National Survey and inputs from the Narcotics Control Bureau (NCB).
- NMBA intends to reach out to the masses and spread awareness about substance use with focus on higher educational Institution, university campuses & schools, reaching out & identifying dependent population, focus on counselling & treatment facilities in hospitals & rehabilitation centres and Capacity building programmes for service providers.

➤ **Achievements of NMBA**

- Through the various activities undertaken on-ground, 9.3+ crore people have been sensitized on substance use including 3+ Crore Youth and 2+ Crore Women.
- Participation of 2.7+ Lakh educational institutions in NMBA.
- 8,000+ Master Volunteers (MVs) have been identified and trained to lead NMBA
- NMBA Mobile Application developed to gather and collect the data of NMBA activities and represent on the NMBA Dashboard on NMBA Website.
- 1.67+ Crore students from 99,595 educational institution participated in the National Drug Free Pledge
- Events like 'Nashe se Azaadi- A National Youth and Students Interaction Programme', 'Naya Bharat, Nasha Mukht Bharat', 'NMBA Interaction with NCC' are regularly organized to engage and connect with youth and other stakeholders.
- Spiritual/Social Service organizations like Chinmaya Mission, RK Mission, Art of Living Foundation, Brahma Kumaris & Sant Nirankari Mission are active and have extended support to NMBA.
- National Action Plan for Drug Demand Reduction (NAPDDR) is a scheme under which financial assistance is provided to State Governments, UT Administration, NGOs/VOs and Government Hospitals for different programmes for Drug Demand Reduction for Awareness Generation, Capacity Building, Counselling, Treatment and rehabilitation.

➤ **Activities have been undertaken under NAPDDR scheme:**

- Treatment and Counseling supported by MoSJE
- ✓ 341 Integrated Rehabilitation Centres for Addicts (IRCA)
- ✓ 72 Outreach and Drop In Centres (ODICs)
- ✓ 49 Community based Peer led Intervention (CPLI)
- ✓ 41 Addiction Treatment Facilities (ATFs)
- ✓ 14 District De-Addiction Centres (DDACs)
- ✓ All of these facilities have been geo-tagged for ease of access to those in need.
- ✓ National Toll-free De-Addiction Helpline '14446'
- ✓ 2,86,402 people benefitted from de-addiction and counselling services in centers supported by MoSJE in 2021-22

• **Awareness**

- ✓ Navchetna Modules: 10+ lakh teachers & 2.4+ Crore students to be trained through the 'NAVCHETNA Modules' teacher training modules developed by MoSJE for sensitizing students (6th -11th standard), teachers and parents on drug dependence, related coping strategies and life skills.
- ✓ In 2017-22, 2,66,817 people sensitised through 5,523 awareness programmes in SCERTs, Schools, College & Universities, NSS and NYK, Kendra Vidyalayas Sangathan (KVS) Institutions and Government Departments, GIAs.

➤ **Addiction Treatment Facilities (ATFs):**

- National Drug Dependence Treatment Centre (NDDTC), All India Institute of Medical Sciences (AIIMS) was entrusted with the task of setting up of 125 Addiction Treatment Facilities (ATFs) in Government Hospitals in 125 identified vulnerable districts/areas wherein no IRCA were functional.
- 41 ATFs have been approved and services have been rolled out in 29 ATFs.

➤ **Way forward for next year**

- **NMBA in Border Villages:** Ministry of Social Justice & Empowerment in convergence with Department of Border Management, MHA will launch Nasha Mukth Bharat Abhiyaan in the 17000 Border Villages in 18 States/UTs during the month of May 2023.
 - **De-Addiction Centres in Prisons :** Till now 15 de-addiction centres in prison settings have been set up in different districts of Haryana and one de-addiction centre in prison setting has been set up in the State of Tripura.
 - **Strengthening counselling and de-addiction facilities:** For a wider reach of counselling, treatment and rehabilitation services, Ministry of Social Justice & Empowerment will be setting up District De-Addiction Centers (DDAC) in gap districts and Addiction Treatment Facilities (ATF) in government hospitals.
- 2. National AVGC-XR Mission**
- **CONTEXT: The Animation, Visual Effects, Gaming and Comic (AVGC) Task Force has called for a National AVGC-XR Mission with a budget outlay to be created for integrated promotion & growth of the AVGC sector. The Task Force headed by Secretary I&B Shri Apurva Chandra has also recommended launching a 'Create in India' campaign with exclusive focus on content creation, In India, For India & For World.**
 - The main recommendations of the Task Force categorized broadly under 4 categories are as under
 - **Domestic Industry Development for Global Access**
 - ✓ A National AVGC-XR Mission with a budget outlay to be created for integrated promotion & growth of the AVGC sector.
 - ✓ Launch of a 'Create in India' campaign with exclusive focus on content creation, In India, For India & For World!
 - ✓ With a goal to make India the global hub for AVGC, institute an International AVGC Platform, along with a Gaming Expo) with focus on FDI, Co-production treaties and Innovation.
 - ✓ Establish a National Centre of Excellence (COE) for the AVGC sector to become an international reference point across Skilling, Education, Industry Development and Research & Innovation for the AVGC sector. Regional COEs will be instituted in collaboration with the State Governments to provide access to local industries and to promote local talent and content.
 - **Developing Talent ecosystem to realize Demographic Dividends**
 - ✓ Leverage National Education Policy (NEP) to develop creative thinking with dedicated AVGC course content at school levels, to build foundational skills and to create awareness about AVGC as a career choice.
 - ✓ Launch AVGC focused UG/ PG courses with standard curriculum and globally recognized degrees. Standardize admission tests for AVGC related courses (viz, MECAT by MESC).
 - ✓ With an eye on the demand of 20 Lakh skilled professionals in AVGC sector in this decade, augment skilling initiatives for AVGC sector under MESC. Enhance Industry participation to ensure employment opportunities and absorption for students from non-metro cities and NE states.
 - ✓ Establish AVGC Accelerators and Innovation hubs in academic institutions, on lines of Atal Tinkering Labs.
 - **Enhancing Technology & Financial Viability for Indian AVGC Industry**
 - ✓ Democratize AVGC technologies by promoting subscription-based pricing models for MSME, Start-Ups and institutions.
 - ✓ Made in India for AVGC technologies through incentive schemes for R&D and IP creation. Evaluate PLI scheme to incentivize AVGC hardware manufacturers.
 - ✓ Enhanced Ease of Doing Business in AVGC sector i.e tax benefits, import duties, curbing piracy, etc.
 - ✓ Leverage Start-Up India to provide technical, financial and market access assistance to AVGC entrepreneurs to promote culture of R&D and local IP Creation.
 - **Raising India's soft power through an Inclusive growth**
 - ✓ Establish a dedicated Production Fund for domestic content creation from across India to promote Indian culture & heritage globally. Evaluate Reservation for high-quality indigenous content by broadcasters.
 - ✓ For an Inclusive India, target skilling and industry outreach for youth in Tier 2 & 3 towns and villages in India. Establish Special incentives for women entrepreneurs in AVGC sector.
 - ✓ Promote local Children's channels for raising awareness on rich culture and history of India among children and youth
 - ✓ Establish framework to ensure Child Rights Protection in the digital world
 - Four Sub-Task Forces were constituted for devising strategies of growth through targeted interventions in their respective areas, Industry & Policy, Education, Skilling , Gaming. Their recommendations have formed the basis of the consolidated report of the Task Force.
 - **Significance**
 - The AVGC sector can serve as a major growth driver for the M&E industry in India and emphasized that beyond the high economic impact of the growth of this sector, the sector also has the potential to better disseminate and promote the Indian culture to the world, connect the Indian diaspora more strongly to India, generate direct and indirect quality employment and benefit tourism and other allied industries.
- 3. 'Methanol Economy' programme**
- **CONTEXT: NTPC and Tecnimont sign MOU to explore possibility to develop Green Methanol Production**

- Methanol is a low carbon, hydrogen carrier fuel produced from high ash coal, agricultural residue, CO₂ from thermal power plants and natural gas. It is the best pathway for meeting India's commitment to COP 21.
- NITI Aayog's 'Methanol Economy' programme is aimed at reducing India's oil import bill, greenhouse gas (GHG) emissions, and converting coal reserves and municipal solid waste into methanol.
- Although slightly lower in energy content than petrol and diesel, methanol can replace both these fuels in the transport sector (road, rail and marine), energy sector (comprising DG sets, boilers, process heating modules, tractors and commercial vehicles) and retail cooking (replacing LPG [partially], kerosene and wood charcoal). Blending of 15% methanol in gasoline can result in at least 15% reduction in the import of gasoline/crude oil. In addition, this would bring down GHG emissions by 20% in terms of particulate matter, NO_x, and SO_x, thereby improving the urban air quality.
- Methanol Economy will also create close to 5 million jobs through methanol production/application and distribution services. Additionally, Rs 6000 crore can be saved annually by blending 20% DME (Di-methyl Ether, a derivative of methanol) in LPG. This will help the consumer in saving between Rs 50-100 per cylinder.
- The Bureau of Indian Standards has notified 20% DME blending with LPG, and a notification for M-15, M-85, M-100 blends has been issued by the Ministry of Road, Transport and Highways. Test standards and plans for the M-15 blend are being evolved in consultation with the Indian Oil Corporation Limited, Automotive Research Association of India and Society of Indian Automobile Manufacturers. In the railway sector, RDSO is working towards blending methanol in the range of 5-20% through direct fuel injection in locomotives.
- On 5 October 2018, Assam Petrochemicals launched Asia's first canister-based methanol cooking fuel programme. This initiative is an extension of our Hon'ble Prime Minister's vision of reducing the import of crude oil and striving towards the provision of a clean, cost-effective and pollution-free cooking medium. Methanol stoves can result in at least 20% savings for households. After the success of the pilot, the methanol cooking programme was scaled up to 1,00,000 households in the States of Uttar Pradesh, Maharashtra, Gujarat, Telangana, Andhra Pradesh, Goa, Karnataka, Jharkhand and Manipur.
- Five methanol plants based on high ash coal, five DME plants, and one natural gas-based methanol production plant with a capacity of 20 MMT/annum, in a joint venture with Israel, have been planned to be set up. Three boats and seven cargo vessels are being built by the Cochin Shipyard Limited for Inland Waterways Authority of India to use methanol as a marine fuel.
- Thermax Ltd has successfully developed a 5 KW methanol-based reformer on a Direct Methanol Fuel Cell (DMFC). This module is being tested to replace DG sets in mobile towers. For direct electricity generation, Kirloskar Oil Engines Ltd has converted a 5 KW generator set to run on 100% methanol. Kirloskar is working towards converting generator sets of 150-300 KVA/KW capacity, in collaboration with Dor Chemicals, Israel.
- Under R&D, work is in progress to set up coal-to-methanol plants in the country using indigenous technology, which is being developed by BHEL (Hyderabad and Trichy), Thermax, and IIT Delhi. Thermax and IIT Delhi are working on a TPD demonstration plant, while BHEL Hyderabad and Trichy are working on 1 TPD and 40 TPD demonstration plants, respectively.
- An R&D project has also been sanctioned by the Department of Biotechnology to IISc Bengaluru and Praj Industries Pune for the production of methanol from biomass. Phase-I of the production of syngas from biomass was demonstrated in January 2019.

ANSWER WRITING

Q. To what extent, in your opinion, has the decentralisation of power in India changed the governance landscape at the grassroots?

The 73rd and 74th Constitutional Amendment to the Indian Constitution formally recognised a third tier of government at the grassroot level, thereby creating the legal conditions for local self-rule i.e. Panchayati Raj and Municipalities. Under the Article 40 of the Indian Constitution, the States shall take steps to organise Village Panchayats and endow them powers and authority to function as unit of self-government.

Achievement of Decentralisation of Power

- Decision-making: The local people can participate in decision-making at local-level issues.
- Women representation: 33% reservation for women has helped to increase women's voice and representation in our democracy.
- Swachh Bharat Abhiyan: In 2019, India became open-defecation free because of ground level work by local bodies.
- Literacy campaign: Arati Devi, sarpanch in a village in Ganjam district in Odisha is credited with starting a literacy campaign for women and reviving traditional folk art in Ganjam.
- Self-help Groups: Meena Behen, sarpanch from a village in Gujarat, has worked for inculcating leadership skills to the self-help group (SHG).

Some Issues Which Halt the Decentralisation of Power in Letter and Spirit

- Inadequate Finances: Limited power to impose cesses and taxes.
- Unscientific Distribution of Functions: Panchayat and the Panchayat Samiti functions overlap, leading to confusion, duplication of efforts.
- Lack of Coordination: Government officials do not coordinate with local representatives.

- No real Functions: Functions like education, health, sanitation and water are remain concentrated with State Governments.

For Local bodies and Panchayats to play a bigger role in human capital interventions, there is need for adequate fiscal resources along with functions and functionaries. The kind of autonomy for governance is provided to 5th and 6th Schedule States needs to be extended to all the States.

MCQs

1. With reference to Nasa Mukh Bharat Abhiyan consider the following
 1. To tackle the issue of Substance Abuse and a vision to make India Drug Free, Nasa Mukh Bharat Abhiyaan (NMBA) was launched on 15th August 2020 in all the districts of India.
 2. Under the programme District Level Nasa Mukh Committees were established which are headed by the District Collector/Magistrate chartered out, planned and taken the lead in the implementation of the Abhiyaan in their respective districts.

Which of the above statement/s is/are correct?

- a) 1 only
- b) **2 only**
- c) Both 1 and 2
- d) Neither 1 nor 2

2. Consider the following statements with reference to the Methanol Economy Program:
 1. It is initiated by the Ministry of New and Renewable Energy.
 2. Methanol is a high carbon and hydrogen carrier fuel.
 3. Methanol can be produced from high ash coal and CO₂ from thermal power plants.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) **3 only**
- c) 1 and 3 only
- d) 1, 2 and 3

3. With reference to Animation, Visual Effects, Gaming and Comic (AVGC) context consider the following
 1. Karnataka, which is the first in India to bring an AVGC policy in India.
 2. Kerala became the first state to set up the first centre of excellence in AVGC.

Which of the above statement/s is/are not correct?

- a) 1 only
- b) **2 only**
- c) Both 1 and 2
- d) Neither 1 nor 2

4. With reference to the UNESCO World Heritage Sites, consider the following statements:
 1. It is a landmark or area with legal protection by an international convention administered by the UNESCO under the UNESCO World Heritage Convention, established in 1972.
 2. These sites are designated by UNESCO for having cultural, historical, scientific or other forms of significance.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) **Both 1 and 2**
- d) Neither 1 nor 2

5. Consider the following pairs

- | | |
|--------------------|--|
| 1. Grey methanol: | It is obtained by synthesis reaction from methane present in natural gas (or in some cases, from coal). |
| 2. Blue methanol: | It is produced using only renewable energy sources in the process and ensuring that no harmful gases are emitted into the atmosphere. Green methanol is thus synonymous with clean, renewable methanol. |
| 3. Green methanol: | It is obtained by synthesis derived from natural gas, but includes as part of the process the capture and storage of the carbon generated during its production, converting it into a less polluting product |
| 4. Biomethanol: | produced from the gasification of sustainable biomass sources such as livestock, agricultural and forestry residues and municipal waste. |
| 5. E-methanol: | produced from hydrogen produced from renewable electricity (what we call green hydrogen) and captured carbon dioxide. |

How many above pair/s is/are correctly matched?

- a) Only one pair
- b) Only two pairs
- c) **Only three pairs**
- d) Only four pairs

6. Consider the following statement
1. Recently the Union government universalises the implementation of a national mobile monitoring system for the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).
 2. The National mobile monitoring system was initiated to capture attendance through the mobile system at worksites with more than 20 workers.

Which of the above given statement/s is/are correct?

- a) 1 only
 - b) 2 only
 - c) Both 1 and 2**
 - d) Neither 1 nor 2
7. With reference to Scheme for Economic Empowerment of Denotified/Nomadic/SemiNomadic (SEED) which was in news recently, consider the following
1. Free coaching to students from these communities for Civil Services, entry to professional courses like medicine, engineering, MBA, etc.
 2. Health Insurance through PMJAY of National Health Authority.
 3. Livelihoods to support income generation
 4. Housing through PM Awas Yojna.

Which of the above is/are components of the SEED?

- a) 1,2 and 3 only
 - b) 3 and 4 only
 - c) 1 and 2 only
 - d) 1,2,3 and 4**
8. Recently President Droupadi Murmu inaugurated the 'PRASAD' project at the tourism facilitation centre in the pilgrim town of Srisailem in Andhra Pradesh, with reference to PRASAD project consider the following
1. It focuses on the development and beautification of the identified pilgrimage destinations.
 2. Under the Scheme, Ministry of Tourism provides Central Financial Assistance (CFA) to State Governments for promoting tourism
 3. It is a Centrally Sponsored Scheme

Which of the above statements is/are correct?

- a) 1 and 3 only
 - b) 2 and 3 only
 - c) 1 and 2 only**
 - d) All of the above
9. In the context Extended Reality (XR) digital technologies for entertainment, gaming etc consider the following statements:
1. In Augmented Reality (AR), a simulated environment is created and the physical world is completely shut out.
 2. In Virtual Reality (VR), images generated from a computer are projected onto real-life objects or surroundings.
 3. AR allows individuals to be present in the world and improves the experience using the camera of smartphone or PC.
 4. VR closes the world, and transposes an individual, providing complete immersion experience.

Which of the statements given above is/are correct?

- a) 1 and 2 only
 - b) 3 and 4 only**
 - c) 1, 2 and 3
 - d) 4 only
10. Which among the following steps is most likely to be taken at the time of an economic recession?
- a) Cut in tax rates accompanied by increase in interest rate.
 - b) Increase in expenditure on public projects.**
 - c) Increase in tax rates accompanied by reduction of interest rate.
 - d) Reduction of expenditure on public projects.